



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/590,012

08/21/2006

Noboru Yanai

062807

6798

38834

7590

06/16/2009

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

DUDNIKOV, VADIM

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

06/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/590,012 | Applicant(s) YANAI ET AL. | |
| | Examiner VADIM DUDNIKOV | Art Unit 3663 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) 2,5 and 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2 Form 1449</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant elects without traverse in response filed at 8/29/2008 of Species II (Second Embodiment, shown in Fig. 2 and disclosed in [0023]+ on page 10, line 10 to page 12, line 14, claims 1, 3) and subspecies A (construction shown in Fig. 3 and disclosed in [0028]+, page 12, line 6 to page 14, line 14, claim 1-3).

The requirement for Species election is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

2. The information disclosure statements filed 2/6/09 and all other information or that portion which caused it to be listed has been placed in the application file. The information has been considered. A signed copy of Form 1449 has been enclosed.

Response to Amendment

3. Amendment filed 3/27/09 forms the basis for this Office Action.

Claims 1 and 3 have been amended. New claims 7-11 have been added. Claims 4 and 6 have been canceled. Claims 2 and 5 have been withdrawn from consideration by

Art Unit: 3663

Applicant as non-elected. Claims 8-11 have been withdrawn from consideration as non-elected because said claims relating to non-elected species B, (construction shown in FIG. 5 and disclosed in [0037], [0038]) and to non-elected species C, (construction shown in FIG. 6 and disclosed in [0039]).

Applicant's remark: "Support for new claim 7 can be found in paragraph [0053] and in Figure 3. Support for claims 8-11 can be found on paragraphs [0061]-[0063]. No new matter has been entered" is not persuasive because there are no paragraph [0053] and paragraphs [0061]-[0063] in the Specification as filed. Application's subject matter should be referred by page and lines or by paragraphs and reference number in drawings in the Specification as filed, but not in Patent Application Publication.

Claims 1, 3 and 7 are subject to examination.

Those rejections and objections that have been overcome by amendment are omitted from the present Office action and are considered withdrawn.

Amendments of Specification and claims overcome objection of Specification and claims rejection under 35 USC 112. Accordingly, said objection and rejections are withdrawn.

Response to Arguments

4. Applicant's arguments see pages 7-11, filed 3/27/09, with respect to of said previous Office action have been fully considered but they are not in every respect

Art Unit: 3663

persuasive. Those rejections and objections that have been overcome by arguments are omitted from the present Office action and are considered withdrawn.

Applicant's remark on page 7: "Support for new claim 7 can be found in paragraph [0053] and in Figure 3. Support for claims 8-11 can be found on paragraphs [0061]-[0063]. No new matter has been entered" is not persuasive because there are no paragraph [0053] and paragraphs [0061]-[0063] in the Specification as filed.

Application's subject matter should be referred by page and lines or by paragraphs and reference number in drawings in the Specification as filed, but not in Patent Application Publication.

Applicant's Arguments on page 7, lines 15+ relating to objection of specification, rejection of claims under 35 USC 112 are persuasive because Amendments of the Specification and claims overcome objection of Specification and claims rejection under 35 USC 112 and said objection and rejections are withdrawn.

Applicant's Arguments on page 9, lines 1+ relating claims rejection under 35 USC 102 and under 35 USC 103 (a) are persuasive because Amendments overcome claims rejection. Said rejections are withdrawn but new grounds of rejection are established. Rejections of amended and new claims are established in light of further consideration of Application, Arguments and further consideration and search of the prior Art. See rejections underneath.

Claim Rejections - 35 USC § 103

Art Unit: 3663

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1, 3 and 7** are rejected under 35 U.S.C. 103(a) as being obvious over Bolton et al. (USPAP 2004/0042579 A1, Bolton hereinafter, inserted in IDS filed 8/21/06) in view of McLain et al., ("Reactor Handbook", v. IV, Interscience Publication, Wiley & Son, 1964, McLain hereinafter, cited before).

Regarding claim 1, Bolton discloses: A gas turbine plant (10 in FIG. 1 [0060]) comprising: a high-temperature gas-cooled reactor (14 in FIG. 1) which warms a coolant by thermal energy being obtained by nuclear fission of clad fission products in coated-particle fuels (as disclosed in [0060]); at least a first gas turbine (high pressure turbine 16), a second gas turbine (a low pressure turbine 18) and a third gas turbine (a power turbine 20); the first gas turbine that is rotated by the coolant being warmed by the high- temperature gas-cooled reactor and shares a first shaft with a first compressor (the high pressure compressor 30) compressing the coolant; the second gas turbine that is rotated by the coolant being discharged from the first gas turbine and shares a second shaft with a second compressor (low pressure compressor 26) compressing the coolant; the third gas turbine that is rotated by the coolant being discharged from the second gas turbine and shares a third shaft with a generator (generator 32) performing electrical power generation operation.

Art Unit: 3663

Bolton fails to disclose directly the limitation: a bypass pathway that allows the coolant to bypass the third gas turbine; wherein, during a rated load operation, flow volume of the coolant flowing through the bypass pathway is controlled so as to make the rotating speed of the second gas turbine fall within a range of a predetermined rotating speed.

However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include said limitation in view of McLain, drawn to the nuclear power plant, hence analogous art who teaches: A gas turbine plant (as shown in FIG. 18.8, page 689) comprises: a high-temperature gas-cooled reactor (reactor in FIG. 18.8) which warms a coolant by thermal energy being obtained by nuclear fission of clad fission products in coated-particle fuels; a first gas turbine (HP turbine) that is rotated by the coolant being warmed by the high-temperature gas-cooled reactor and shares a same shaft with a compressor (HP compressor) compressing the coolant; a second gas turbine (LP turbine) that is rotated by the coolant being discharged from the first gas turbine and shares a same shaft with a generator (generator) performing electrical power generation operation; and a bypass pathway (bypass 7 with a valve) that has the gas turbine with generator bypassed to the coolant pipe; wherein, during the rated load operation, the flow volume of the coolant flowing through the bypass pathway is controlled so as to make the rotating speed of the gas turbine with compressor fall within a range of a predetermined rotating speed.

Modification of the Bolton's power plant according to the McLain's teaching meets claim limitation.

Art Unit: 3663

Motivation for said inclusion derives from McLain teaches: bypass valve 7 is controlled by overspeed and load controller as shown in FIG. 18.8 for optimizing turbines rotations. The claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his her technical grasp. If this leads to the anticipated success, it is likely the plant is not of innovation but of ordinary skill and common sense (MPEP 2143).

According to MPEP 7.37.10 the limitations of claim 1 with recitations: “which warms a coolant by thermal energy being obtained by nuclear fission of clad fission products in coated-particle fuels”; “that is rotated by the coolant being warmed by the high-temperature gas-cooled reactor and shares a same shaft with a compressor”; “compressing the coolant a second gas turbine”; “is rotated by the coolant being discharged from the first gas turbine and shares a same shaft with a generator”; “performing electrical power generation operation”; “has the second gas turbine bypassed to the coolant”; “during the rated load operation, the flow volume of the coolant flowing through the bypass pathway is controlled so as to make the rotating speed of the first gas turbine fall within a range of a predetermined rotating speed” are related to the statements of intended use and the field of use and have no a patentable weight. The statements of intended use or field of use, clauses are essentially method limitations or statements or intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See MPEP § 2114 which states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed

Art Unit: 3663

apparatus from the prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions.

Apparatus claims cover what a device is not what a device does.

The gas turbine plant disclosed by Bolton with modification according to McLain’s teaching is capable to perform operations disclosed by functional language in claim 1 and meets claim limitation because said plant has a bypass (7) with a valve.

On claim **3**, McLain teaches: the bypass pathway is provided with bypass valves (as shown in FIG. 18.8, bypass 7 with a valve controlled by “overload and load control”) to control the flow volume of the coolant flowing through the bypass pathway.

According to MPEP 7.37.10 the limitations of claim 3 with recitations: “to control a flow volume of the coolant flowing through the bypass pathway” is related to the statements of intended use and the field of use and have no a patentable weight. The statements of intended use or field of use, clauses are essentially method limitations or statements or intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See MPEP § 2114 which states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions.

Art Unit: 3663

Apparatus claims cover what a device is not what a device does.

The gas turbine plant disclosed by Bolton with modification according to McLain's teaching is capable to perform operations disclosed by functional language in claim 1 and meets claim limitation because said plant has a bypass (7) with a valve.

On claim 7, Bolton AND McLain teach all limitation of claim 1 as detailed above but fails to teach directly the limitation: the bypass pathway that allows the coolant to bypass the second gas turbine is provided from upstream of the second gas turbine to downstream of the second gas turbine.

However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include said limitation in view of McLain, drawn to the nuclear power plant, hence analogous art who teaches a bypass with valves from entrance of turbine with the compressor as shown in GIH. 18.8.

Modification of the Bolton's power plant according to the McLain's teaching meets claim limitation.

Configuration of the power plant with number of pair turbine/compressor and number of bypasses represents a process of design and optimization with simple duplication of bypasses according known design.

Increasing the number of bypasses is no more than the duplication of parts with predictable and intended effects. See *In re Garza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Art Unit: 3663

Motivation for said inclusion derives from McLain teaches: bypass valve 7 is controlled by overspeed and load controller as shown in FIG. 18.8 for optimizing turbines rotations. The claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his her technical grasp. If this leads to the anticipated success, it is likely the plant is not of innovation but of ordinary skill and common sense (MPEP 2143).

The claim would have been obvious because a person of ordinary skill has good reason to pursue the known options within his her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense (MPEP 2143).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

Art Unit: 3663

date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vadim Dudnikov whose telephone number is 571- 270-1325. The examiner can normally be reached on 8:00 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached, Mon-Fri 7:00am-4:00 pm, at telephone number 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VD.

/Rick Palabrica/

Primary Examiner, Art Unit 3663